

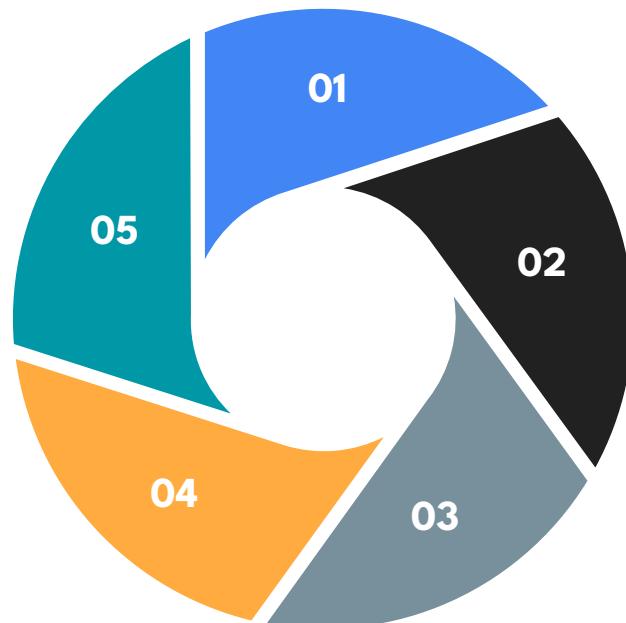
# Bangkok Housing

Property Finder Application



# Executive Summary

Addressing the growing demand  
for affordable housing in the city



The platform will be user-friendly and efficient

The proposed platform aims to  
improve access to affordable  
housing in Bangkok

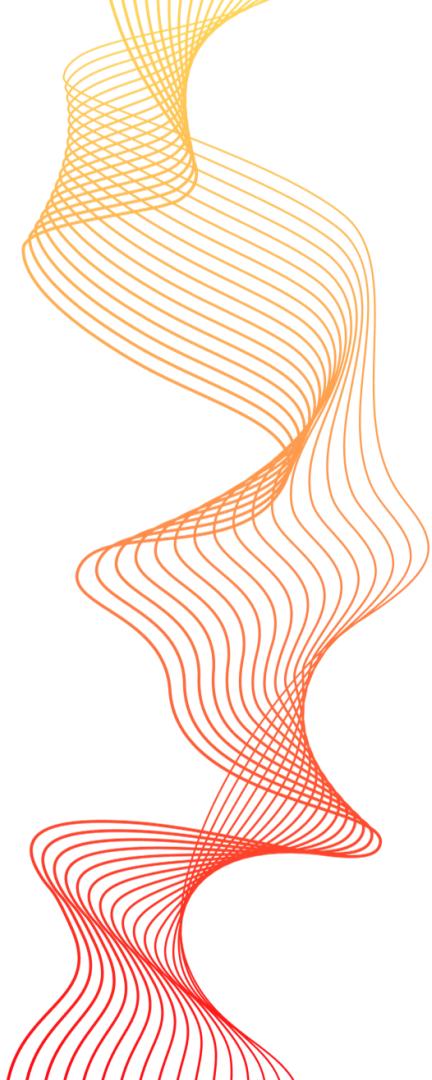
It will provide a practical,  
sustainable, and quality-driven  
solution

Caters to the needs of lower-income residents



# Business Problem

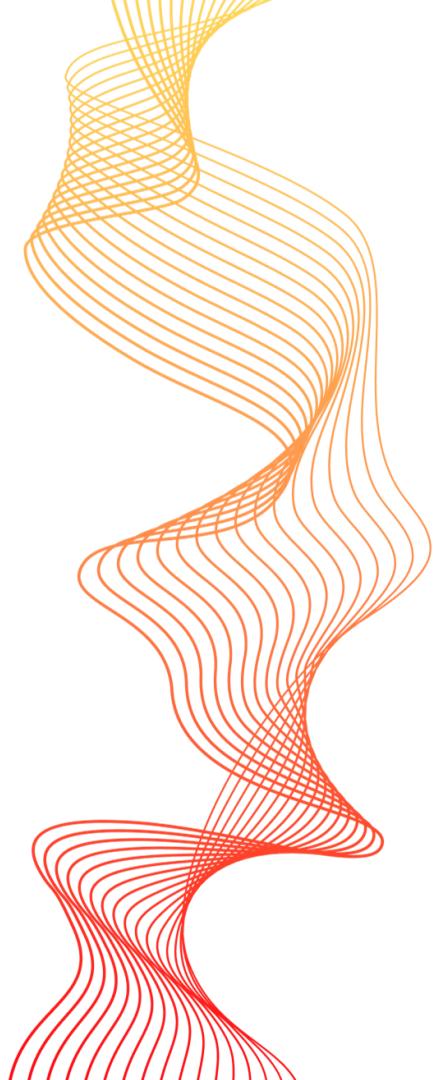
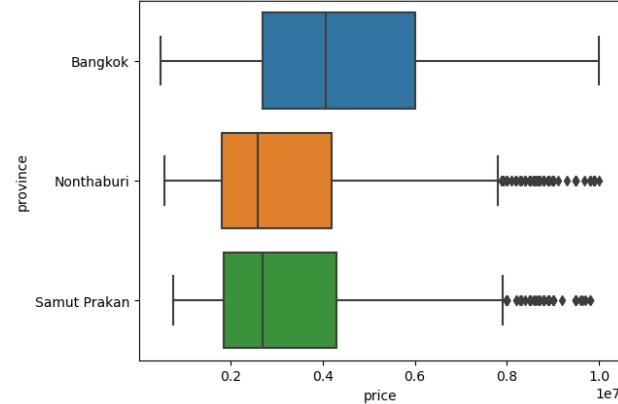
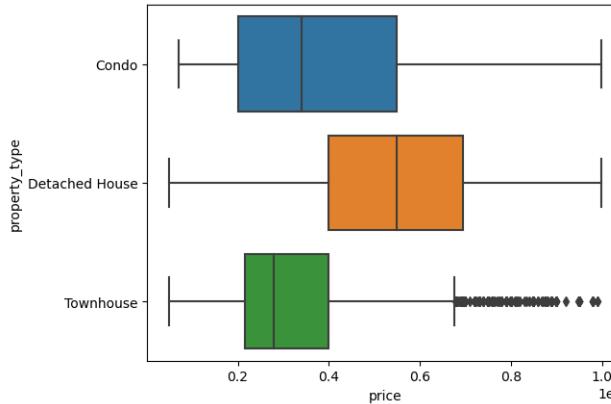
- Which property type is affordable
- Location is suitable for those residents
- Any nearby property (BTS, MRT, bus station, etc.)





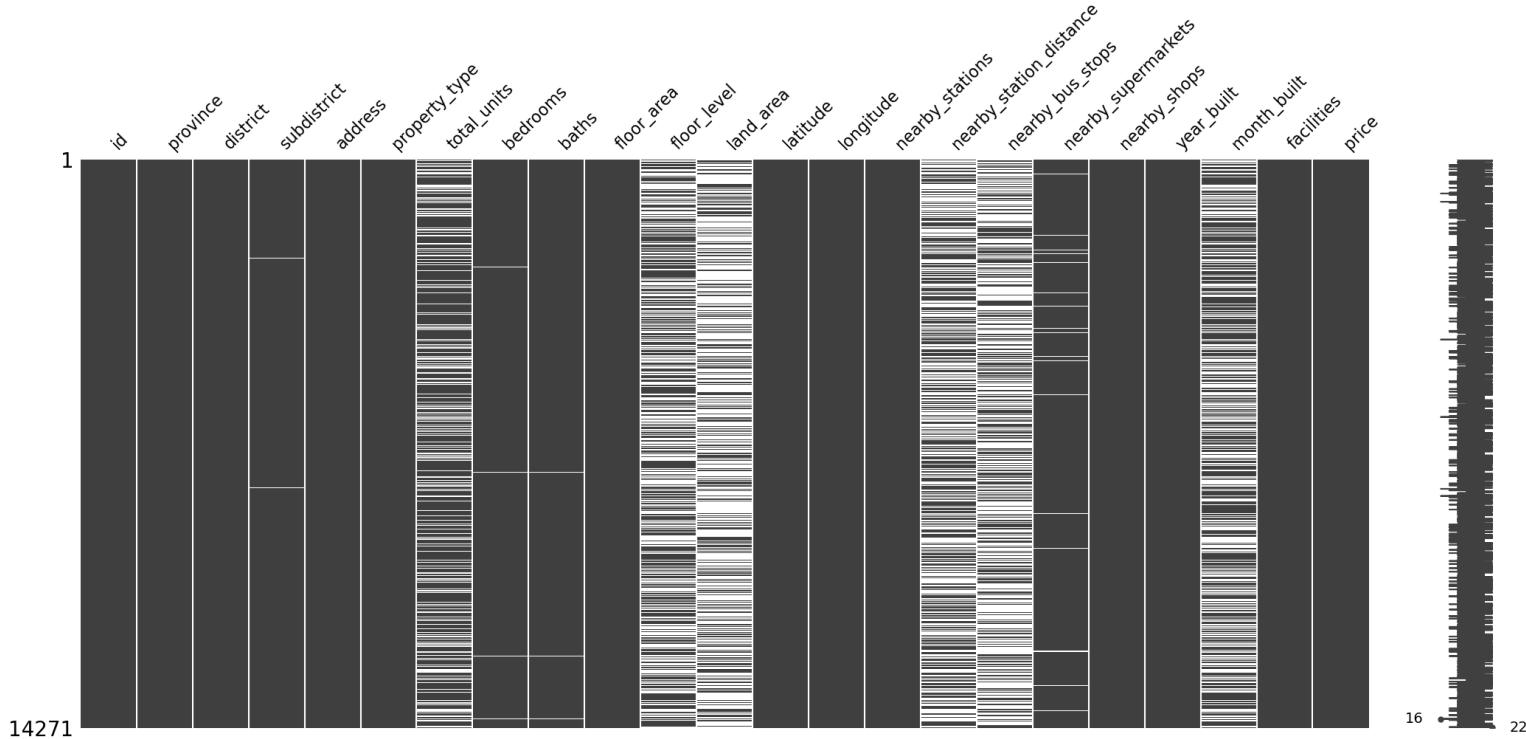
# Exploratory Data Analysis

- Deal with Missing data
  - Random Integer
  - Interpolate, and then round value
- Drop outliers (only train data)
- Misleading Data (subdistrict)
  - Property name
  - Replace from district data which contain subdistrict





# Missing Data



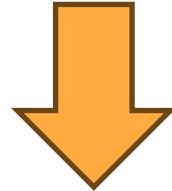
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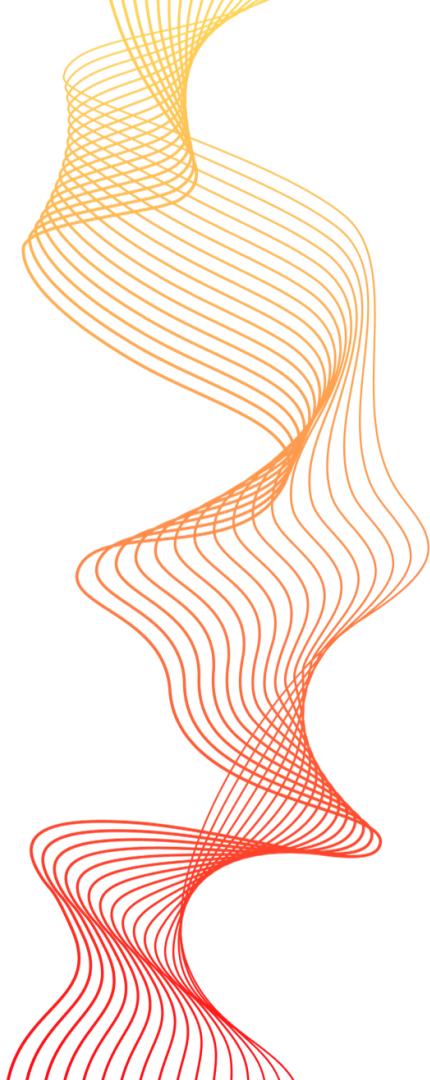
# Wrong Input Data

	<b>id</b>	<b>province</b>	<b>district</b>	<b>subdistrict</b>	\
244	11019179	Bangkok	Ratchathewi	The Mark Ratchada-Airport Link	
300	5165252	Bangkok	Watthana	The Alcove Sukhumvit 49	
305	10916770	Bangkok	Din Daeng	The Kris Express 2	
315	10231728	Bangkok	Ratchathewi	The Mark Ratchada-Airport Link	
662	7433797	Bangkok	Watthana	The Bloom Sukhumvit 71	
748	10855854	Bangkok	Watthana	The Alcove Sukhumvit 49	
1453	10301096	Bangkok	Watthana	The Bloom Sukhumvit 71	
1502	10879957	Bangkok	Ratchathewi	The Mark Ratchada-Airport Link	

- Google and Look “address” column of property name
- match and replace to subdistrict



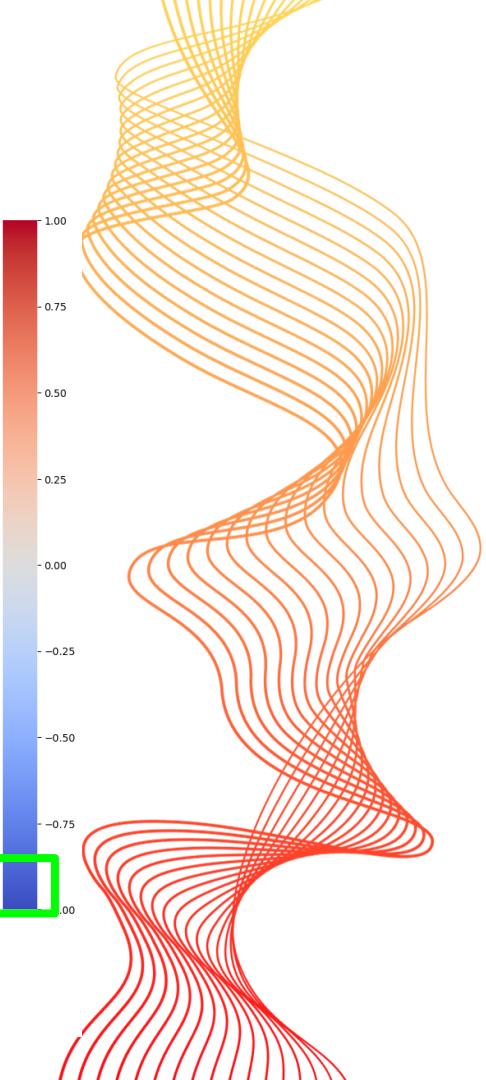
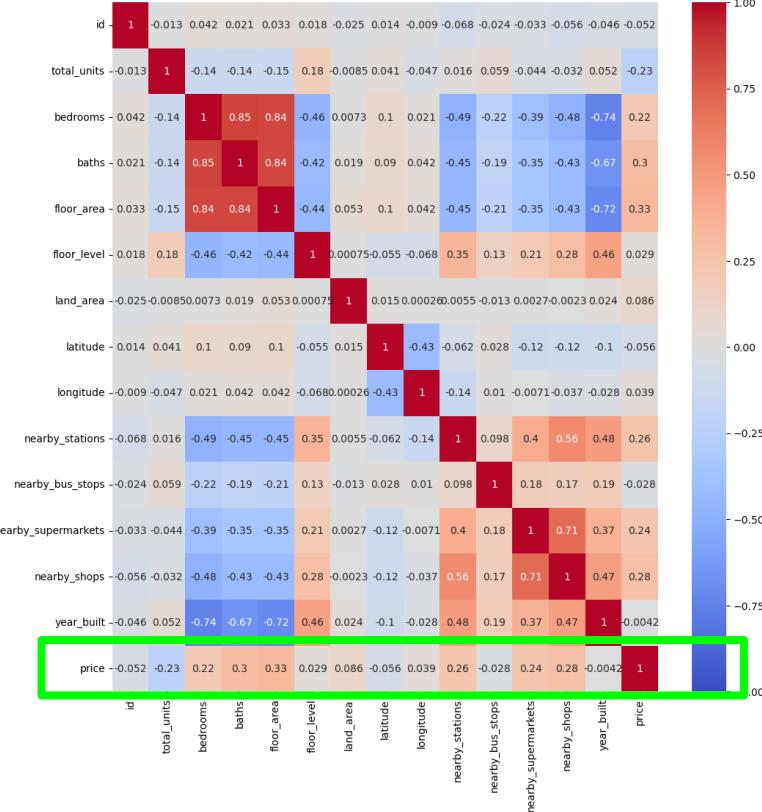
subdistrict	\
Phra Khanong Nuea	
Khlong Toei Nuea	
Khlong Tan	
Bang Khun Kong	
Bang Phai	



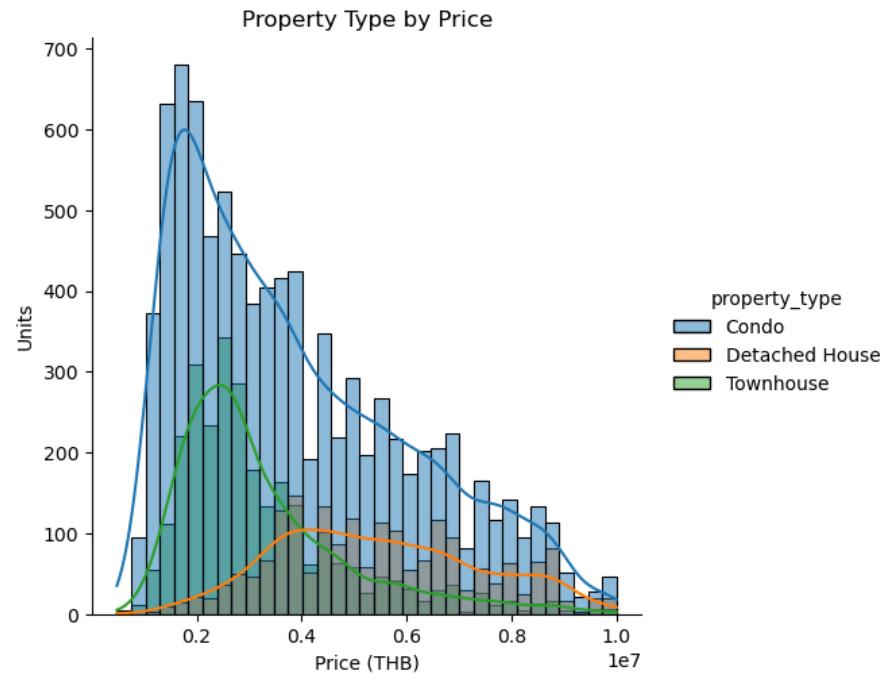
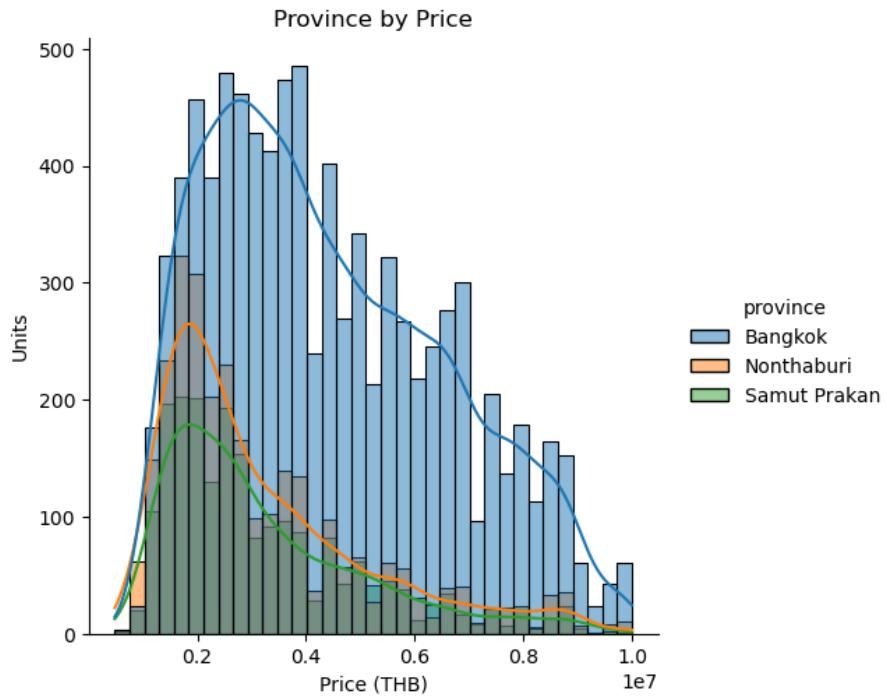


# Correlation & Key Features

1. subdistrict
2. property\_type
3. bedrooms
4. baths
5. floor\_area
6. floor\_level
7. land\_area
8. nearby\_stations
9. nearby\_supermarkets
10. nearby\_shops
11. price (Key Feature)



# Price by Property Type and Province



# Model Development Process

Model	RMSE Score (m = million)	Features	Optimized
Ridge Regression	1953697	District, and other features, except latitude, longitude, and nearby station distance	without standard scaler
Ridge Regression	1245066	Sub Districts and other features, except latitude, longitude, and nearby station distance	R_alpha and standard scaler
Lasso Regression	1271944	Sub Districts and other features, except latitude, longitude, and nearby station distance	Best_alpha and standard scaler



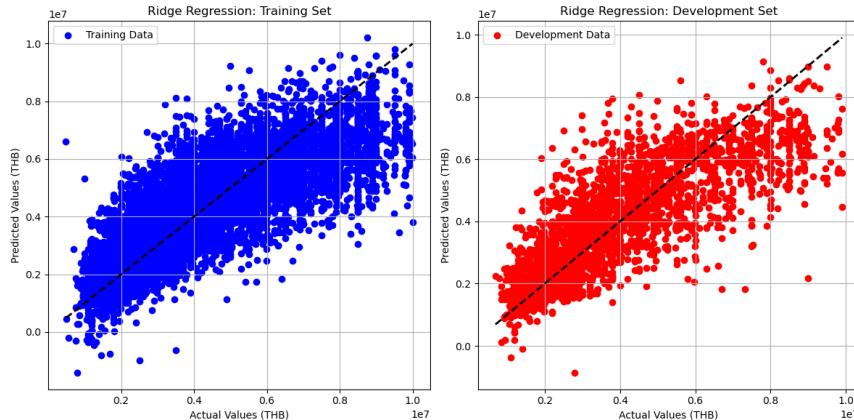
# Model Evaluation

## Ridge Regression Model

- Use the trained model to make predictions on the test dataset.
- R-squared (R<sup>2</sup>) Score for training data: 0.694
- R-squared (R<sup>2</sup>) Score for development data: 0.647

## Lasso Regression Model

- R-squared (R<sup>2</sup>) Score for training data: 0.693
- R-squared (R<sup>2</sup>) Score for development data: 0.647





# Conclusion

In conclusion, the application helps people to find affordable range depend on in this following:

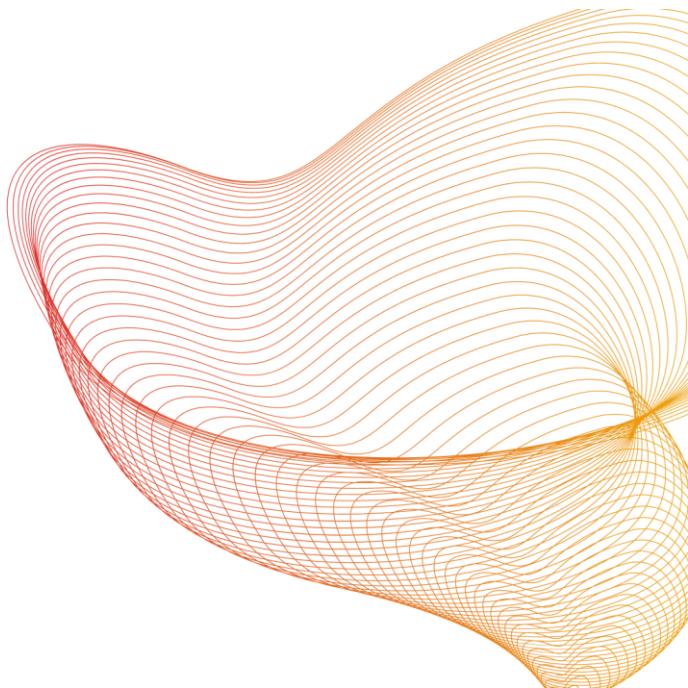
- How large of land area (house and townhome), floor area(condominium)
- The location (subdistrict) that influence the price such as Wattana and other high population is high price, but other areas are much more cheaper.
- Floor level at Condominium can influence price because if higher level is much more expensive.





# Recommendation

- Comparing price between user's interested locations
- Conduct market research for property type matching
- Integrate financial range and income calculation feature





Thank you for your time and attention 😊